- Authored five watershed assessments, and five more are in progress, to examine the
  effects and influences of human activities, geology, climate, and soils conditions on
  the surface water quality and ecological health of watershed systems. These analyses
  have focused on nutrient and fecal bacteria transport, water temperature, and fish
  habitat, as influenced by agriculture, forestry, water use, and natural disturbances.
- Served as project manager for preparation of an Air Quality Review for Class I national parks throughout California. Also co-authored similar reviews for the Pacific Northwest and the Rocky Mountain and Great Plains regions of the National Park Service.
- Coordinated and analyzed available data bases throughout the United States, and internationally, providing evidence regarding the extent and magnitude of surface water acidification. Summarized and synthesized pertinent data and authored the State of Science and Technology Report for the National Acid Precipitation Assessment Program (NAPAP) on historical acidification.
- Served as project manager for a modeling project to assess aquatic and terrestrial effects of sulfur and nitrogen throughout the southern Appalachian Mountains for the Southern Appalachian Mountain Initiative (SAMI).
- Served as lead author and individual responsible for synthesis and integration for report to the National Park Service on the sensitivity of natural resources in Shenandoah National Park to air pollution degradation.
- Coordinated research efforts of a team of experts in the fields of surface water chemistry, mathematical modeling, and paleoecology for the purpose of comparing paleoecological inferences and process-based model hindcasts of Adirondack Mountain lakewater chemistry. Supervised data analyses and interpretation, and served as lead author for final agency report.
- Directed field research project for the Alaska Department of Environmental Conservation on the Kenai Peninsula to investigate forest effects from industrial emissions of nitrogen. Coordinated and supervised all logistics and field sampling activities, including aerial infrared photography, measurements of forest growth and health, and collection of soil solution, conifer needles, precipitation, and throughfall. Directed data base construction, QA, data analyses, and interpretation; served as lead author on final report.
- Served as member of NAPAP's working group that prepared the aquatic portions of the 1990 Integrated Assessment (IA), NAPAP's final policy document for Congress.
   Drafted major portions of the IA; participated in a series of assessment meetings attended by federal, national laboratory and industry scientists, economists, and policy specialists; provided input on all aquatics sections of the final document. Also authored the aquatic sections of NAPAP's 1996 Report to Congress.
- Served as project manager for E&S's role in the construction and management of a
  diatom paleoclimate data cooperative for North and South America. The data
  cooperative brought together paleolimnological data from a multitude of sources that
  can be used to reconstruct aspects of historical regional climates from diatom remains
  in dated lake sediment cores.

#### **AWARDS AND HONORS**

Academic scholarship, Stonehill College, 1968-72

Massachusetts State Scholarship, 1969-72

Cum laude, Stonehill College, 1972

Post doctoral fellowship, Royal Norwegian Council for Scientific and Industrial Research, 1984-86

Director's Technical Contribution Award, Corvallis Environmental Research Laboratory, U.S. EPA, 1987

Northrop Services, Inc., Best Orator, Effective Winning Presentations, 1987

Best Scientific Paper Award, Corvallis Environmental Research Laboratory, U.S. EPA, 1988

### **PUBLICATIONS**

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- NAPAP Aquatic Effects Working Group (Multiple authors including **Sullivan, T.J.**). 1991. National Acid Precipitation Assessment Program 1990 Integrated Assessment. National Acid Precipitation Assessment Program, Washington, DC. 520 pp.

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- Sullivan, T.J., K. U. Snyder, E. Gilbert, J.M. Bischoff, M. Wustenberg, J. A. Moore, and D. Moore. 2005. Assessment of water quality in association with land use in the Tillamook Bay Watershed, Oregon. Water Air Soil Pollut. 161:3-23.
- **Sullivan, T.J.**, M.C. Saunders, B.L. Nash, K.A. Tonnessen, and B.J. Miller 2005. Application of a regionalized knowledge-based model for classifying the impacts of nitrogen, sulfur, and organic acids on lakewater chemistry. Knowledge Based Systems. 18(1):55-68.
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- **Sullivan, T.J.**, B.J. Cosby, A.T. Herlihy, J.R. Webb, A.J. Bulger, K.U. Snyder, P.F. Brewer, E.H. Gilbert, and D.L. Moore. 2004. Regional Model Projections of Future Effects of Sulfur and Nitrogen Deposition on Streams in the Southern Appalachian Mountains. Water Resour. Res. 40(2), W02101 doi:10.1029/2003WR001998.
- Sullivan, T.J., M. Wustenberg, J. A. Moore, K. U. Snyder, E. Gilbert, D. Moore, and E. Mallery. 2004. Riparian Plantings and Fencing Improve Water Quality in Tillamook River Watershed (Oregon). Ecological Restoration 22(2):138-140.
- Sullivan, T.J., D.F. Charles, J.A. Bernert, B. McMartin, K.B. Vaché, and J. Zehr. 1999. Relationship between landscape characteristics, history, and lakewater acidification in the Adirondack Mountains, New York. Water Air Soil Pollut. 112:407-427.
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- **Sullivan, T.J.**, B.J. Cosby, C.T. Driscoll, D.F. Charles, and H.F. Hemond. 1996. Influence of organic acids on model projections of lake acidification. Water Air Soil Pollut. 91:271-282.
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- **Sullivan, T.J.**, C.T. Driscoll, J.M. Eilers, and D.H. Landers. 1988. Evaluation of the role of sea salt inputs in the long-term acidification of coastal New England lakes. *Environ. Sci. Technol.* 22:185-190.
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- **Sullivan, T.J.**, I.P. Muniz, and H.M. Seip. 1986. A comparison of frequently used methods for the determination of aqueous aluminum. *Int. J. Environ. Anal. Chem.* 26:61-75.
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- Sullivan, T.J., M. Wustenberg, K.U. Snyder, J. Moore, D. Moore, E. Gilbert, and E. Mallery. 2002. Remediation of Agricultural Contributions of Fecal Coliform Bacteria, Sediment, and Heat in the Tillamook Basin: Final Report and Conclusions of the Beaver Creek Project. E&S Environmental Restoration, Inc., Corvallis, OR.
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- Snyder, K.U., **T.J. Sullivan**, R.B. Raymond, D. Moore, and E. Gilbert. 2002. North Santiam River Watershed Assessment. E&S Environmental Chemistry, Inc., Corvallis, OR.

- Snyder, K.U., **T.J. Sullivan**, R.B. Raymond, E. Gilbert, and D. Moore. 2002. Necanicum River Watershed Assessment. E&S Environmental Chemistry, Inc., Corvallis, OR.
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- Sullivan, T.J., J.M. Bischoff, K.U. Snyder, R.B. Raymond, S. White, and S.K. Binder. 2001. Wilson River Watershed Assessment. E&S Environmental Chemistry, Inc., Corvallis, OR.
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- Cosby, B.J. and **T.J. Sullivan**. 2001. Quantification of dose-response relationships and critical loads of sulfur and nitrogen for six headwater catchments in Rocky Mountain, Grand Teton, Sequoia, and Mount Rainier National Parks. Report 97-15-01. E&S Environmental Chemistry, Inc., Corvallis, OR.
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- **Sullivan, T.J.** and B.J. Cosby. 1995. MAGIC Model Applications for Surface and Soil Waters as Input to the Tracking and Analysis Framework (TAF). Model Documentation. Report prepared for U.S. Department of Energy. DOE/ER/30196-7.
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  - **Sullivan, T.J.**, J.A. Bernert, M. Wustenberg, and J. Moore. Assessment of Water Quality in the Five Major Rivers that Flow into Tillamook Bay. 20<sup>th</sup> Annual Meeting, Pacific Estuarine Research Society, Tillamook, OR, May 15-17, 1997.
  - **Sullivan, T.J.** and B.J. Cosby. Testing, Improvement, and Confirmation of a Watershed Model of Acid-Base Chemistry. 5th Intern. Conf. on Acidic Deposition, Gothenberg, Sweden, 26-30 June, 1995.
  - **Sullivan, T.J.** and J.M. Eilers. Ecological Effects of Sulfur and Nitrogen Deposition in the Pacific Northwest Region, Meeting of the International Joint Commission, Vancouver, BC, Canada, October, 1995 (Invited).
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- **Sullivan, T.J.** Aqueous aluminum speciation in acidified areas of southernmost Norway. Presented at Norwegian Chemical Society, Annual Meeting, Oslo. April, 1986.

### TIMOTHY J. SULLIVAN

During the last four years, I have testified at trial and/or given depositions in two cases:

United States (Plaintiff) v. Westvaco Corporation (Defendant), Case No. MJG-00-CV-2602 in 2005.

United States (Plaintiff)v. Ohio Edison Company et al. (Defendants), Civil Action No. C2-99-1181 in 2004.

My rate for work conducted for this case is \$170 per hour.

My publications during the last ten years are as follows:

## **Books**, Special Issues

- Sullivan, T.J. 2005. Acidification chronic. In: Lehr, J.H. and J. Keeley (Eds.). Water Encyclopedia: Surface and Agricultural Water. John Wiley & Sons.
- Sullivan, T.J. 2000. Aquatic Effects of Acidic Deposition. Lewis Publ., Boca Raton, FL. 373 pp.

# Journal Articles/Book Chapters

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- Sullivan, T.J., B.J. Cosby, J.R. Webb, R.L. Dennis, A.J. Bulger, F.A. Deviney Jr. 2008. Streamwater acid-base chemistry and critical loads of atmospheric sulfur deposition in Shenandoah National Park, Virginia. Environ. Monit. Assess. 137:85-99.
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